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UNDER THE CHARGE OF

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The Diagnosis of Ulcer of the Stomach.—Bönniger (*Berl. klin. Woch.*, 1908, xiv, 396) asserts that the pain of gastric ulcer may be so characteristic as to justify the diagnosis of the condition. It is a matter of common experience, however, that the pains are often atypical or that they may closely resemble the pains of other diseases. To aid in the recognition of the pains arising from the presence of an ulcer in the stomach, Bönniger makes use of a dilute solution of hydrochloric acid which he pours into the empty stomach through the stomach tube. The proceedure is as follows: The stomach tube is introduced into the fasting stomach early in the morning. If one obtains no fluid, 100 c.c. of water is poured in, and after shaking movements on the part of the patient it is withdrawn and examined for acids, blood, albumin content, epithelial cells, and mucus. (This examination Bönniger finds very helpful in all stomach cases.) In ulcer no pain is caused by the introduction of the water, and it serves to eliminate psychic elements in the subsequent use of the acid solution. Next, one introduces through the tube 100 to 200 c.c. of $\frac{N}{10}$ HCl into the stomach. In patients with ulcer of the stomach severe pain ensues at once—usually relieved by giving milk. In no other gastric disease, including carcinoma, has Bönniger obtained a like result. If no pain is produced by giving the $\frac{1}{10}$ normal acid, change of position and shaking are resorted to, so that the acid may be brought into contact with all parts of the gastric mucosa. Failure to elicit pain now means that the pains of which the patient complains do not result from the presence of peptic ulcer, according to Bönniger's experience. Two essentials for the successful carrying out of the test are an empty stomach and the absence of supersecretion with high acidity. The test is of doubtful value in cases of ulcer when no pain exists; when the pain is atypical, it is a great aid. The test is further very useful in determining the efficacy of treatment; with improvement the pain produced becomes less, and entirely disappears when the ulcer is healed.

Gastric Secretion in Rectal Feeding.—Michael (*Berl. klin. Woch.*, 1907, xliv, 1446) concludes, from examinations made by him in Ewald's clinic, that neither in healthy individuals nor in invalids does the administration of a nutrient enema lead to the secretion of gastric juice, at least for one-half to one hour after giving the enema. Rectal feeding is therefore not in any way harmful in gastric ulcer.

The Basophilic Granules in the Red Blood Cells in Anemias.—Askanazy (*Ztschr. f. klin. Med.*, 1907, lxiv, 288) has changed his views about the origin of these granulations. He formerly believed, with the majority of recent writers upon this subject, that the basophilic granules are derived from the breaking up of the nucleus of the red blood cell. His opinion now is that they are the result of changes induced by the plasma upon polychromatophilic red cells. He has observed that the more intense the polychromatophilic staining of the red cell is, the more numerous, the smaller, and the more closely placed are the granules; conversely, the coarser and more distinct the granules, the more the color of the protoplasm approaches the orthochromatic. The same things he finds true of the erythroblasts. Askanazy does not look upon basophilic granules as the normal physiological expression of the disappearance of polychromatophilia, for cells showing these granules are not present in the blood of the embryo, the newborn, or in the bone marrow. The granules appear only when, in abnormal conditions, the chemical or physical characters of the plasma are changed from the normal. The basophilic granules are of diagnostic importance only in lead poisoning. Askanazy agrees, then, with Grawitz and others that the basophilic granules found at times in the red blood cells are not nuclear in origin, but, unlike Grawitz and his followers, he considers them a sign of regeneration of the blood, not a sign of degeneration.

The Ophthalmic and Cutaneous Tuberculin Reactions and Other Methods for the Diagnosis of Tuberculosis.—Wolff-Eissner (*Beit. z. Klin. der Tuber.*, 1908, ix, 1 to 189) has presented a very comprehensive study of the diagnosis of tuberculosis. The methods for the positive diagnosis of tuberculosis are given as (1) the demonstration of tubercle bacilli; (2) the agglutination test (Arloing); (3) the tuberculin test (Koch). The latest modifications in the use of tuberculin, namely, the cutaneous reaction (v. Pirques) and the conjunctival reaction (Wolff-Eissner, Calmette), are considered at length. After giving in detail the technique of administration, the author sets forth his results with these new diagnostic procedures. He finds that the conjunctival reaction is very much more marked in early cases (patients with few physical signs or none at all), while in the third stage of pulmonary tuberculosis the reaction may fail. Others have found failure of reaction in cases which advanced rapidly, and they have therefore criticised it, but this Wollff-Eissner considers one of its most valuable features; for in all such cases that he has observed the diagnosis was readily made by other means, and the absence of the reaction is, then a very valuable prognostic sign. Lack of reaction in manifest cases of tuberculosis means, he thinks, diminished powers of resistance on the part of the body, "an ominous sign." Cases are cited to substantiate this point.

Wolff-Eissner thinks it is too early to speak with confidence of the value of the cutaneous and conjunctival reactions in suspected cases of tuberculosis, as it is scarcely six months since the methods were introduced, and sufficient time has not elapsed to observe the further course of such cases. His experience, so far as it goes, is that the conjunctival reaction corresponds in results practically with subcutaneous injection of tuberculin. As to repetition of the conjunctival test, Wolff-Eissner believes that a positive result following one or more negative tests indicates a latent process.

Among 192 patients in whom no evidence of tuberculosis could be found on careful physical examination, 96 gave a positive cutaneous reaction, 35 a positive conjunctival reaction. The author believes, from clinical and pathological studies, that patients having healed "latent" tuberculous foci react to the cutaneous test, while it is only the active processes which are revealed by the conjunctival reaction —and these only when the resisting powers of the body are sufficiently high. In this way the enormous difference in the number of positive reactions in patients supposedly non-tuberculous is explained.

The use of the conjunctival and cutaneous tests is considered in pediatrics, dermatology, ophthalmology, gynecology, psychiatry, and veterinary medicine. Theoretical considerations follow. In the sputum of the tuberculous Wolff-Eissner calls attention to the importance of lymphocytes. In early cases he finds that they may constitute 33 to 90 per cent. of all cells in the sputum. The lymphocytes may be increased before tubercle bacilli appear in the sputum and even later with a mixed infection. The similar increase in the relative number of lymphocytes in the sputum in pertussis can scarcely lead to confusion.

(The article is so full and contains such a wealth of material that it is not suitable for a short abstract.)

Animal Inoculation in the Diagnosis of Tuberculosis.—Weber (*Münch. med. Woch.*, 1908, lv, 321) calls attention to the great value of animal inoculation and its comparative neglect in the diagnosis of tuberculosis. Guinea-pigs are used because of their great susceptibility to the tubercle bacillus. The procedure is as follows: Pleural exudate or urine is centrifugalized and the sediment is transferred to a small quantity of sterile physiological salt solution; with the sputum about 0.5 c.c. of it is placed in the normal salt. The salt solution containing the suspected material is then injected into the lower part of the abdominal wall. An acute inflammatory process may result from the presence of organisms other than the tubercle bacillus; if this accident is avoided, however, an enlargement of the regional lymph glands up to the size of a lentil may be palpated within ten to sixteen days—rarely later, provided the animal has been infected with tubercle bacilli. The lymph gland is removed aseptically under ether, embedded in paraffin, and sections are stained for Bacillus tuberculosis. If bacilli are few in number, it may be necessary to inoculate several animals before a safe conclusion may be reached. Traumatism (pinching) in the region of the lymph glands, as recommended recently by Bloch, may lead to an earlier swelling, but secondary infection with pyogenic cocci is common and greatly complicates the histological examination of the lymph gland. Weber emphasizes the futility of attempting to differentiate smegma and tubercle bacilli by staining methods alone, and strongly urges the more widespread use of animal inoculation in the diagnosis of tuberculosis. The time required is not great and the results obtained, with careful technique, are conclusive.

The Serum Treatment of Epidemic Cerebrospinal Meningitis.—SIMON FLEXNER and J. W. JOBLING (*Jour. Exp. Med.*, 1908, x, 141) note that in part of the work of the Commission appointed by the Department of Health of the City of New York an attempt was made to modify favorably the course of experimental injections with Diplococcus intracellularis (Weichselbaum) with sera prepared in several kinds of small animals. This was found to be successful in those experimented upon, and was tried on human subjects, but the cases were so few that the results were not included in the first report. Since then the diplococcus antiserum prepared by Flexner and Jobling from the horse has been successfully tested in cases widespread over this country and abroad, and this article is the report of the results obtained with the serum. These results are those in 47 cases reported upon, excluding 4 fatal cases which were not favorable for a reliable test. There were 79.9 per cent. of recoveries and 20.1 per cent. of deaths. Although the number of cases was small, yet the treatment was begun at such various times in the course of the disease that the tests were particularly severe. The results, therefore, have more value. When given within the first three days of the sickness the recoveries in 18 cases were 88.9 per cent. This is very encouraging when the usual high mortality is considered with other forms of treatment. In 25 instances the termination of the disease after injection could be followed; in 13 the termination was by lysis; in 12 by crisis. In a number of other cases the termination of the disease, after an acute and violent onset, within forty-eight hours of the injection of the antiserum was striking and impressive. Once or twice, after an abrupt onset of the symptoms lasting several days, relapses occurred, which were as promptly controlled by another injection of the serum as was the original injection. The introduction of the antiserum into the body by means of the spinal canal was justified (1) by the advantage of bringing the antiserum into direct contact with the focus of infection and inflammation, and (2) by the knowledge that elimination of colloids and crystalloids even from the blood stream into the cerebrospinal fluid is a slow and imperfect process in health, and probably more so in inflamed states of the membrane. In this report all of the cases received intraspinal injection. The effect noted by the direct application of the antiserum on the diplococci present in the exudate of the cerebrospinal membrane is most striking, and indicates rapid degeneration and arrest of the free multiplication of the cocci. Flexner and Jobling think that the dangers of anaphylaxis can be neglected at present. The early injection (within the first three days) gives the most promising results, and yet favorable effects have been recorded in many cases even as late as the eighth week. At present the dose of the serum rests upon an empirical basis, but the effects of the larger doses used lately can only be noted in many more reported cases. Flexner and Jobling are firm in their belief that more cases must be reported before any final conclusive proofs of the beneficial effects of the antiserum can be stated. Yet, certainly, from the beneficial effects so far noted, it deserves widespread tests; these should be carefully controlled, in order to prove or disprove the value of the antiserum. Since this article was prepared for publication a number of cases have been reported with successful results following the injections of the antiserum.

The Hemolytic Action of Ankylostoma Duodenale.—PRETI (*Münch. med. Woch.*, 1908, lv, 436) has collected the parasites from the stools of patients after administering to them extractum filicis maris or thymol. The worms were then washed in physiological salt solution several times and finally rubbed up in a mortar with a small quantity of the salt solution. The turbid suspension obtained in this way was neutral in reaction. Increasing quantities of the suspension were added to a 5 per cent. suspension of washed red blood corpuscles, placed in the incubator at 37° for two hours, and then in the ice chest until the following morning. Preti finds that Ankylostomum duodenale contains a hemolytic substance which is active not only upon the red blood cells of man, but also upon those of the dog, rabbit, ox, and guinea-pig. The hemolytic agent is insoluble in the normal salt solution, slightly soluble in alcohol and ether; it is thermostabile. Addition of lecithin increases its activity, and cholesterin does not neutralize it. After the suspension of the parasite has been digested by trypsin, the hemolysin is soluble in water. It was found that 2.5 mg. of moist ankylostomum sufficed to hemolyze 1 c.c. of the corpuscle suspension. The hemolysin discovered belongs to the lipoids and is analogous to those found in organ extracts, in bothriocephalus, and in sclerostoma. The relation of this hemolyzing body to the anemia produced by ankylostomum duodenale, the author will discuss in another paper.

The Parathyroid Glands in Osteomalacia.—ERDHEIM (*Zentralb. f. d. med. Wissensch.*, 1908, xlvi, 163) determined by animal experiments that a relationship exists between the parathyroid glands and calcium metabolism. Extirpation of these glands in rats led to fractures of the teeth and defective production of dentine. On the basis of these experiments, Erdheim examined the parathyroid glands of man in 6 cases of osteomalacia and compared them with the glands of 9 other patients dying of other diseases. The result was: Case I: An enormous hyperplasia of one of the parathyroid glands; in the remaining three glands, no change. Case II: One gland enlarged; all showed colonies of newly formed tissue. Case III: All four parathyroid glands, of which three were enlarged, showed signs of atrophy. Cases IV and V: No enlargements of the glands, but changes similar to those in Case II. Case VI: No changes. Tetany is often seen in patients suffering with osteomalacia. Tetany is definitely the result of injury to, or removal of, the parathyroid glands. Possibly a similar relationship exists in osteomalacia combined with tetany.